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The Cairns Psychology Group

# *AUTISM SPECTRUM AND RELATED DISORDERS*

*DEVELOPMENTAL USE OF FUNCTIONAL ANALYSIS*



DIAGNOSES, DISORDERS, DESCRIPTIONS: BOXES AND BIASES

# **AUTISM SPECTRUM DISORDER**



# Understanding Behaviour

- Diagnosis
- Syndromal (Descriptive Diagnosis)
- Cultural
- Contextual



# DSM-5 Criteria for Autism Spectrum Disorder

Currently, or by history, must meet criteria A, B, C, and D

**A. Persistent deficits in social communication and social interaction across contexts, not accounted for by general developmental delays, and manifest by all 3 of the following:**

1. Deficits in social-emotional reciprocity
2. Deficits in nonverbal communicative behaviors used for social interaction
3. Deficits in developing and maintaining relationships

**B. Restricted, repetitive patterns of behavior, interests, or activities as manifested by at least two of the following:**

1. Stereotyped or repetitive speech, motor movements, or use of objects
2. Excessive adherence to routines, ritualized patterns of verbal or nonverbal behavior, or excessive resistance to change
3. Highly restricted, fixated interests that are abnormal in intensity or focus
4. Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of environment;

**C. Symptoms must be present in early childhood (but may not become fully manifest until social demands exceed limited capacities)**

**D. Symptoms together limit and impair everyday functioning.**



# Descriptive Diagnosis

- Is defined by what is observed or reported.
- No causal variable known or used for diagnosis.
- Correctly we should say “meets the criteria for Autism/PDD”
- *All mental health diagnosis are descriptions*



# Autism Does not Cause ANYTHING

- Without knowing cause of the symptoms we can not say what Autism causes or does not cause.
- This leads to many people treating children in a way that is consistent with what they *believe* is ASD caused and as such end up *making* it true.
  - Autism makes learners visual
  - Autism makes children ‘stim’
  - Children with autism are not social



WHAT WORKS, WHAT DOESN'T AND WHAT MIGHT?

# INTERVENING





# Lovaas and Beyond

- Shown to be effective in research
  - Lovaas (1987) reported 47% no longer identified as Autistic after 2 years at 40 hours a week.
  - 4 partial replication's of these results
  - Approx. 550 scientific studies supporting it's use in Autism (Matson 1994).
  - Recommended method by Surgeon General of U.S.
- A better review of the research National Standards Project





# National Standards Project 1 (2009)

- Behavioural Educational 90% of all proven methods\*
- Reviewed over 7,400 abstracts
- 5,978 removed
  - Unrelated to ASD
  - Unrelated to treatment
  - Not meet the minimum empirical (scientific) standards!
    - Research design
    - Measurement
    - Valid cases of ASD
- Broke findings of treatments into 3 groups.
  - Established, Emerging, Unestablished



# Best Practice: National Standards Project – 2 (2015)

- Many Meta-analysis
- National Standards Project most thorough.
- Review 1: 2009,
  - Number papers meeting the SMRS
  - 7,400 reviewed – 1422 made the standard
- Review 2. 2015
  - 2,705 reviewed – 351 made the standard



# Established

UNDER 22	OVER 22
BEHAVIOURAL INTERVENTIONS 298 + 155 CBT (emerging to established) EIBI/'ABA' LANGUAGE TRAINING - VBA/SP (Emerging to Established) MODELING NATURALISTIC TEACHING – IT PARENT TRAINING PACKAGES (all roles) PEER TRAINING PACKS (initiation prompt) PIVOTAL RESPONSE TEACHING SCHEDULES SCRIPTING SELF-MANAGEMENT SOCIAL SKILLS PACKS (tool skills) STORY BASED INTERVENTIONS (perspective “I”)	BEHAVIOURAL INTERVENTION



# Emerging

UNDER 22	OVER 22
<p>AACC DEVELOPMENTAL RELATIONSHIP TREATMENT EXERCISE EXPOSURE PACKS FUNCTIONAL COMMUNICATION TRAINING IMITATION BASED INTERVENTIONS LANGUAGE TRAINING MASSAGE THERAPY MUSIC THERAPY PECS REDUCTIVE PACKAGES SIGN INSTRUCTION SOCIAL COMMUNICATION TECHNOLOGY BASED INTERVENTION THEORY OF MIND INTERVENTION</p>	<p>VOCATIONAL TRAINING PACKAGE</p>



# Unestablished

UNDER 22	OVER 22
ANIMAL ASSISTED AUDITORY INTERGRATION TRAINING CONCEPT MAPPING DIR/FLOORTIME FACILITATED COMMUNICATION GLUTEN/CASEIN FREE DIET MOVEMENT BASED INTERVENTION SENSE THEATRE SENSORY INTERVENTION PACKAGES SHOCK THERAPY SOCIAL BEHAVIOUR LEARNING GROUPS SOCIAL COGNITION INTERVENTION SOCIAL THINKING INTERVENTION	CBT MODELING MUSIC THERAPY SENSORY INTEGRATION PACKAGES



# FUNCTIONAL ANALYSIS

THE CORE UNIT OF ANALYSIS IN ABA IS  
THE OBSERVED FUNCTIONAL  
RELATIONS AKA FUNCTIONAL ANALYSIS



# Cultural Diagnosis

- Our culture has formed its own descriptive DX system;
  - Personality “he just a mean person”
  - Emotional “anger made me do it”
  - Cognition “he thinks he can beat me”
  - Pop Psych “she lacks self esteem”
  - Pseudo Medical “he’s got something wrong with him”
- Etc.... What are your ways of interpreting?





# Contextual Analysis

- There are no causal diagnostic approaches for behaviour/mental health
- Descriptive diagnosis tells us little about the individual and nothing about cause.
- Culture Diagnosis is simply us projecting our beliefs and baggage on to others.
- Sp, We use Contextual and Developmental Analysis



# Why use Functional Analysis?

- Analyses the factors we can impact upon – we don't get drugs or scalpels and restrain teaches little.
- Stops us blaming the individual for causes we inferred
- Stops bias and self fulfilling prophecy
- We manipulate context to effect change.
  - Teachers, psychs, speechies, OT's, etc etc
- Based on firm science of what is known about all behaviour and functioning.



# DOING FUNCTIONAL ANALYSIS



# The Functional Context: The 3 Term Contingency

- To identify why a behaviour is occurring we look at 3 main variables *together...*
- *Antecedent*
- *Behaviour*
- *Consequence*



# What is a *Behaviour*?

Behaviour is the;

*response you can directly sense.*

To identify the behaviour describe exactly what you see – nothing more and nothing less

- He acted ‘Jealously’ is not a behaviour
  - hit the guy is.
- He got ‘Frustrated’ is not a behaviour
  - throws the pen away is.
- Saying he just likes getting in trouble is not a behaviour
  - Saying “he engages in a high frequency rule breaking behaviour” is



# What is an *Antecedent*?

The antecedent is the;

*STIMULI (TRIGGER/ CUE) in the environment that elicits the behaviour.*

- To find the antecedent describe the sensory moment that occurred *before* the behaviour occurred.
- The ANTECEDENT stimuli is the cue that tells the person that the behaviour is worth doing...



# Examples of Antecedents

1) He acted 'Jealously' ....

A -----→B

*Saw a guy talking to his girlfriend he hit the guy.*

2) He got 'Frustrated' is not a behaviour

A-----→B

After 3 failures he throws the pen away.

3) He just likes getting in trouble

A is? B is?

When teacher walks near he engages in a high frequency rule breaking  
behaviour.





# What are *Consequences*?

Consequences are;

*The sensed moment following the behaviour*

- To find the consequence describe the sensory moment that occurred right *after* the behaviour occurred. (not necessarily what you did to the child but what actually *happened right after*)
- The CONSEQUENCES are the feedback that tells the person that the behaviour is worth doing again next time that CONTEXT occurs.
- They do this by strengthening and defining the function of a behaviour.
- When the conditions next occur (the “A”):



# Examples of Consequences

1) He acted 'Jealously' ....

A -----→B-----→C

*Saw a guy talking to his girlfriend he hit the guy the guy left..*

2) He got 'Frustrated' is not a behaviour

A-----→B-----→C

After 3 failures he throws the pen, teacher says 'no' & retrieves.

3) He just likes getting in trouble

A is? B is? C is?

When teacher walks near he engages in a high frequency rule breaking  
behaviour and gets told off.



# A note on Consequences: Punishers and Reinforcers

Reinforcers: *Anything consequence that increases the chances of a behaviour happening again when those conditions are presented.*

- Reinforcers are NOT rewards (but they might be for some).

Punishers: *Anything consequence that increases the chances of a behaviour happening again when those conditions are presented.*

- Punishers DO NOT mean to hurt people (some people find pain reinforcing).
- Punishment is still unique (some people find praise punishing)

**Each individual has their own history and biology.**

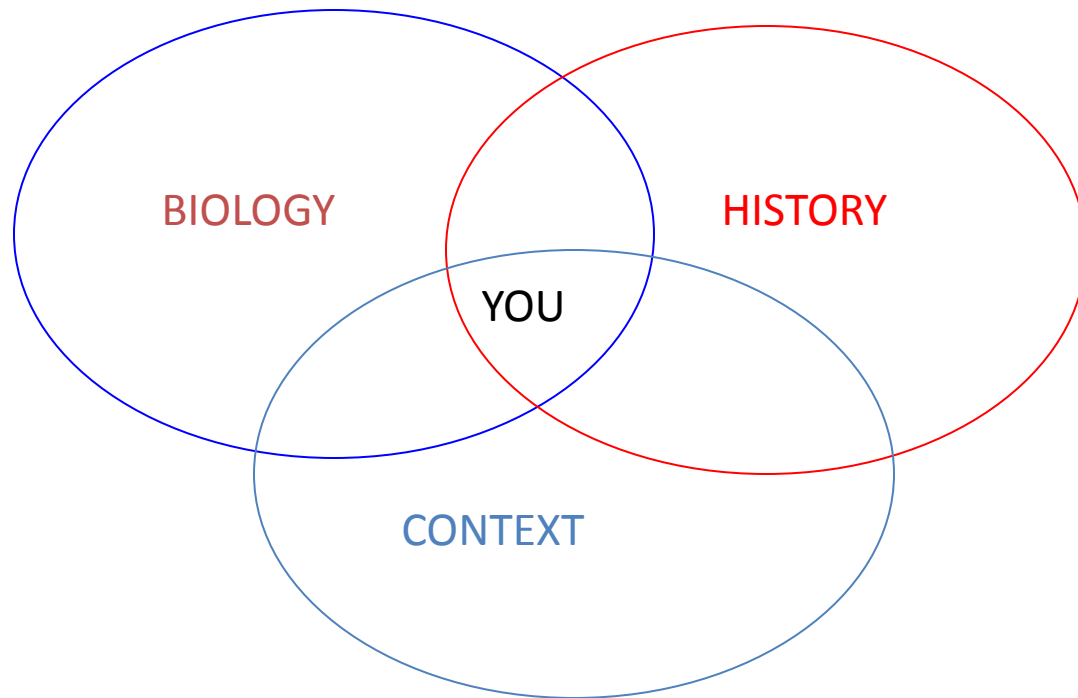


# The Illusion of 'Intrinsic'

- One of our favourite terms in cultural language is 'intrinsic' which suggests 'freedom' or motivation coming from inside.
  - The brain is never removed from context.
  - So nothing is really 'intrinsic' - there is always contextual feedback somewhere.
- Often what is meant is 'natural' or non-authoritarian/planned motivation.
  - Pride still has symbolic and social feedback
  - Curiosity has non-repeating, unfamiliar, partial feedback
  - Belonging has social feedback which we may label (ie "I belong")
  - Self-Esteem has social or experiences that we label as 'good' and identify as caused by us.
- NATURAL REINFORCES LEAD TO MORE FUNCTIONAL DEVELOPMENT AND MAINTAINED CHANGE BETTER THAN ARTIFICIAL ONES.
- ARTIFICIAL ONES MAY BE NEEDED TO CREATE CHANGE BEFORE BEING FADED (ARTIFICIAL'S AREN'T EVIL IF USED WITH INSIGHT AND PLANNING)



# What the functional measures “catch”



# Example F.A.

A	B	C	Possible Function
Asked to pick something up	Hits his head	Head is attended to	Escape from attention or task
Doing DTT task increased in difficulty	Hits head and screams	Trials are stopped and he is attended to	Escape/Avoid
Mum tells him to turn off TV	Hits head	Mum tries to stop him and eventually calms him	Escape/Avoidance
Asked to come inside	Hits head and falls to the ground	EA goes out to calm him and bring him in	Avoidance....



# INTERVENING AT CONSEQUENTIAL LEVEL

ENGINEERING THE 'TERRAIN'



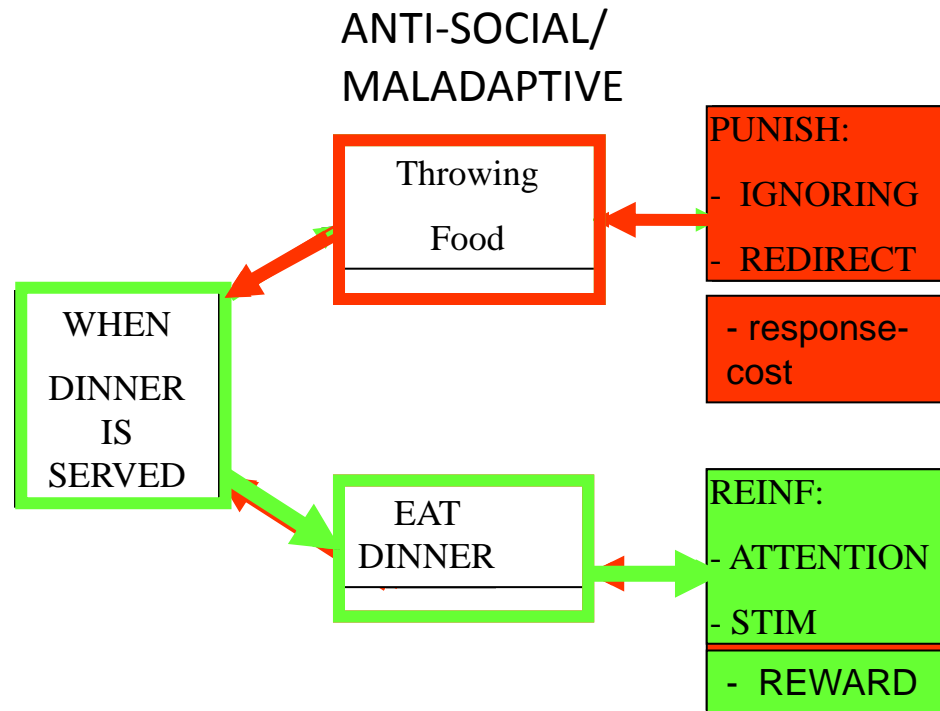


# Behaviour Change is really Teaching

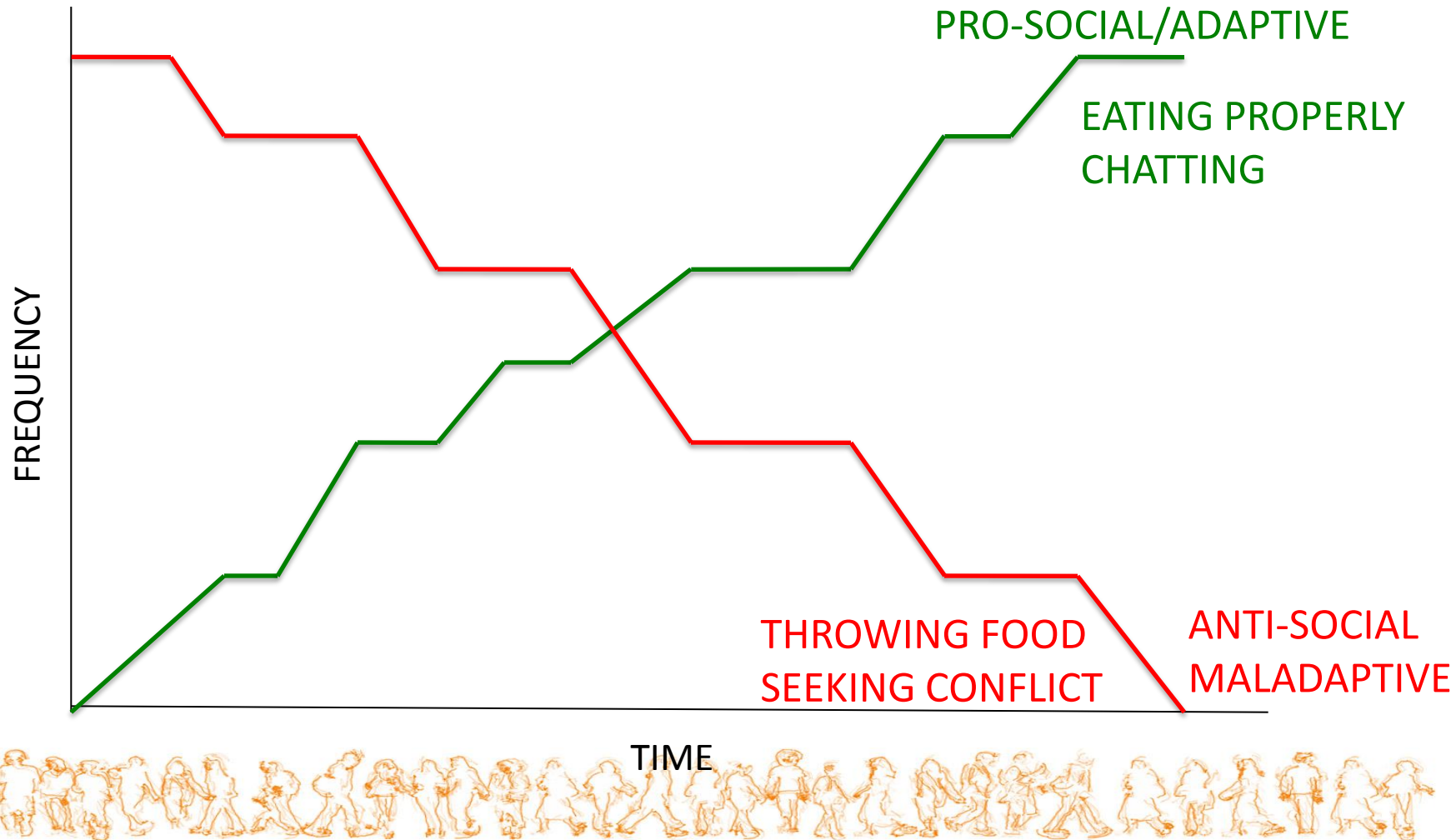
- Knowing the function of the behaviour problem is not enough.
- We must also know what we want teach *instead*.
- And if they are not doing it - the the contexts has not it
  - Just because someone can tell you what they should do instead does not mean the have learned to function that way!
- Behaviour 'Management' is really socialization. The teaching of social and coping skills.



# 3 TERM 'flow' of behaviour change Map



# HOW FLOW OF BEHAVIOUR SHOULD LOOK



# HOW SOCIAL SYSTEMS USE CONSEQUENCES

Speeding In Car

Pass Test to get back

Lose license

Fine

Speed

accident

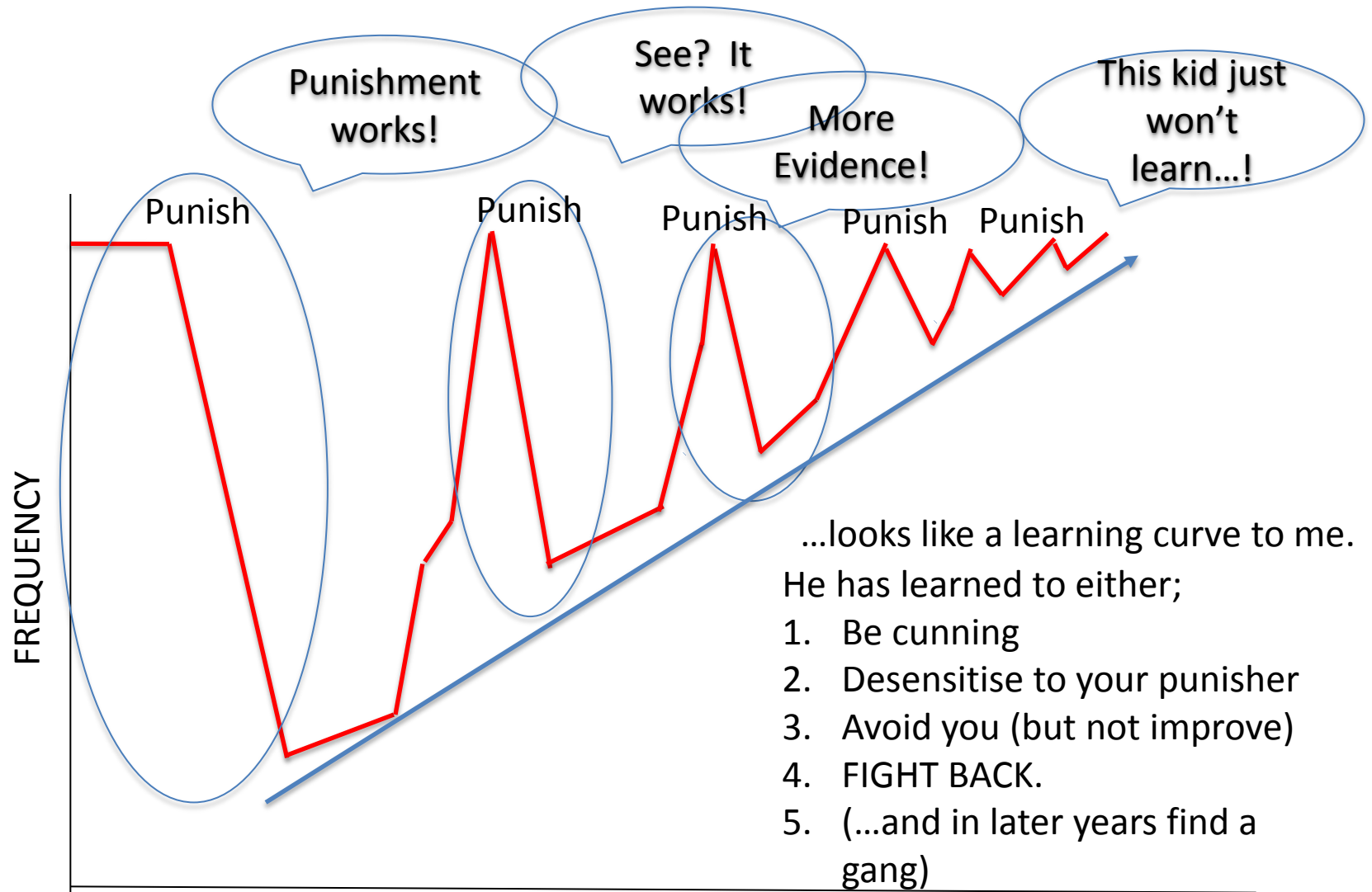
LATE FOR WORK

Drive  
safe

Notice  
safe and  
no fine

*We don't add  
incentives*

# We Like to Punish Each Other: Illusion of Effects



And has devastating effects...  
Its everywhere...

The screenshot shows a Google Chrome browser window. The address bar displays the URL [www.mirror.co.uk/news/world-news/izabel-laxamana-girl-takes-life-5839048](http://www.mirror.co.uk/news/world-news/izabel-laxamana-girl-takes-life-5839048). The page title is "Izabel Laxamana: Girl takes her own life days after dad posts YouTube video to publicly shame her for bad behaviour". The article is dated 11:00, 7 JUNE 2015 and is by Laura Connor. The text of the article states: "Izabel jumped from a bridge just days after her dad posted a humiliating video of her long hair being chopped off as a punishment". Below the text is a social sharing bar with 1073 shares and buttons for Facebook, Twitter, Google+, and Pinterest. There is also a newsletter sign-up form with the text "Enter your e-mail for our daily newsletter" and a "Subscribe" button. On the right side of the page, there is an advertisement for "HYPER+JUICE Battery Packs" for MacBook, iPhone, iPad, Android & USB, with a "SHOP NOW" button. The bottom of the browser window shows a dock with various application icons.

Chrome File Edit View History Bookmarks People Window Help

Inbox (2,365) - darincains x Izabel Laxamana: Girl takes x how to take a screenshot on x Some Judges Prefer Public x www.pitt.edu/ppcl/Publicat x How do I enable or disable x

www.mirror.co.uk/news/world-news/izabel-laxamana-girl-takes-life-5839048

Inbox (1,151) - darin Mandrill ANZ MoneyManager Power Diary SoLaCE | Centre for News Popular Imported From Firefox BigFooty | AFL News Berlin Trip - TripCase Other Bookmarks

# Izabel Laxamana: Girl takes her own life days after dad posts YouTube video to publicly shame her for bad behaviour

11:00, 7 JUNE 2015 BY LAURA CONNOR

Izabel jumped from a bridge just days after her dad posted a humiliating video of her long hair being chopped off as a punishment

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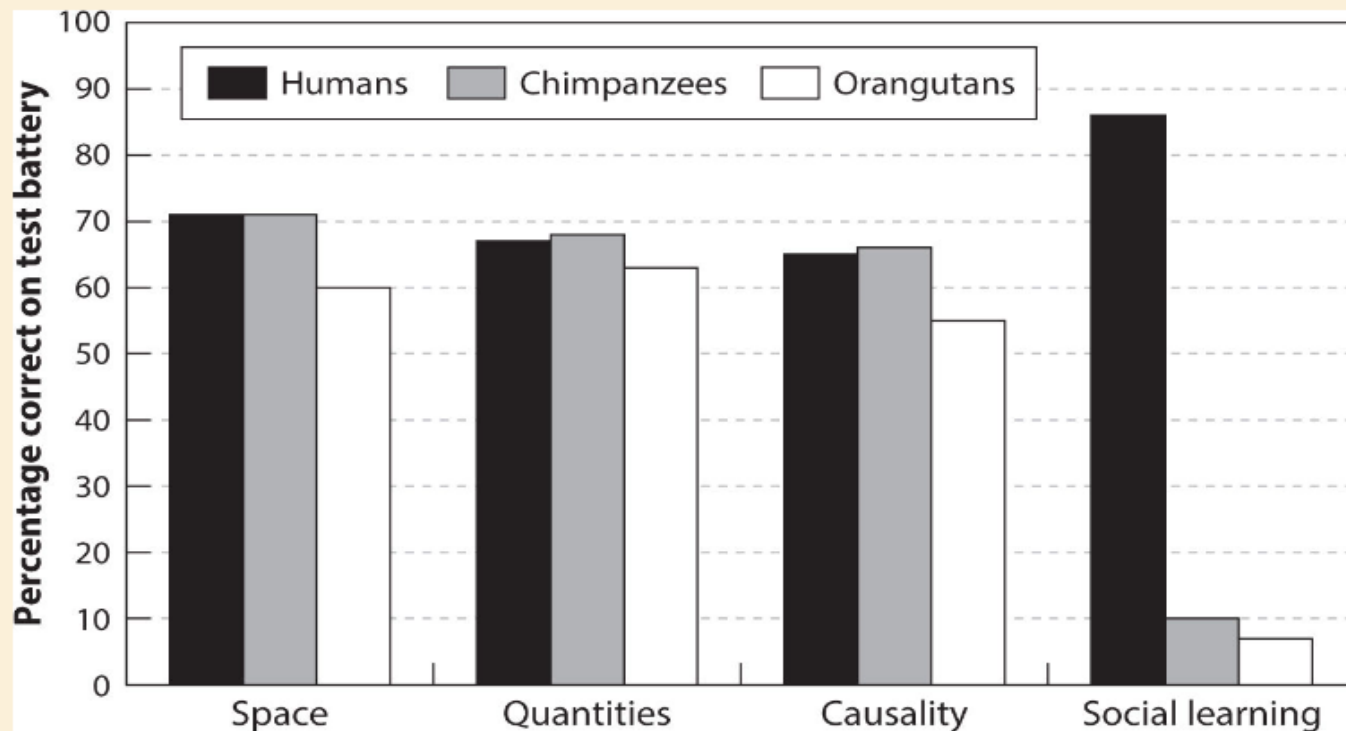


# SOCIAL TRANSMISSION: IMPLEMENTATION CONSIDERATIONS

Attachment/Learning/Socialization



# Our Problem: Social/Cultural Transmission & Human Development



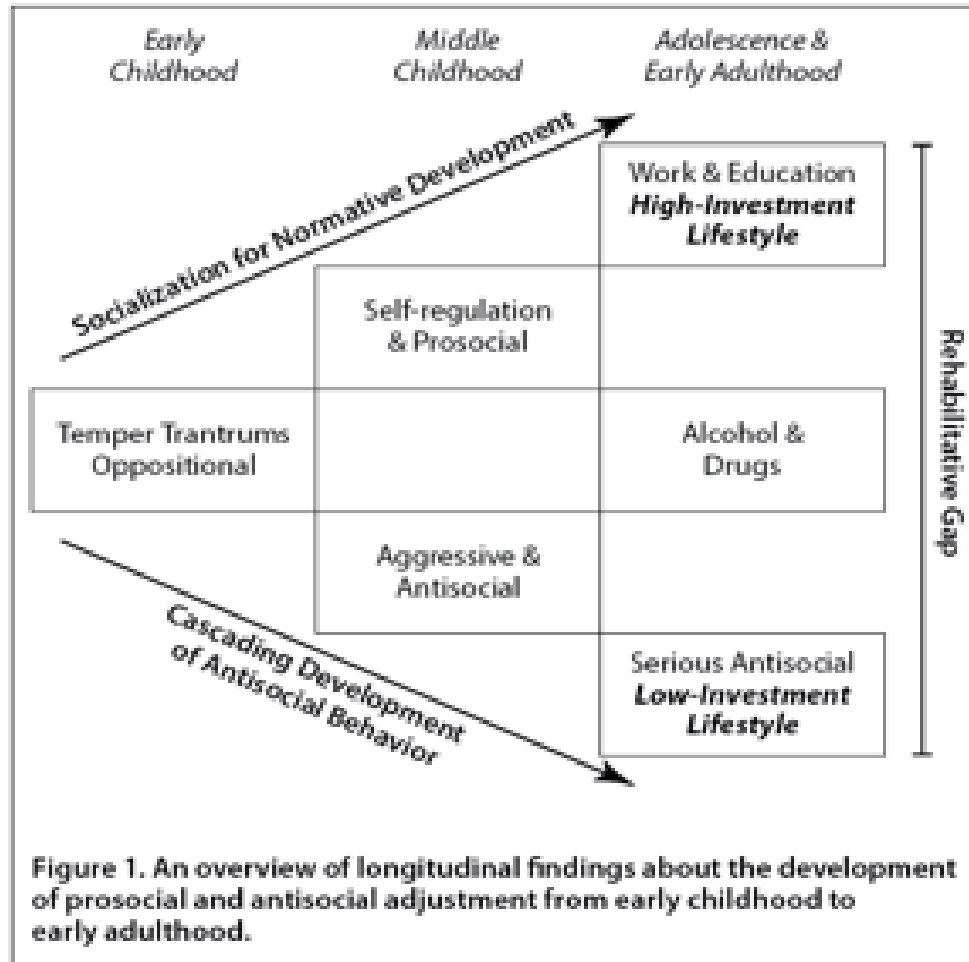
**Figure 2.2.** Average performance on four sets of cognitive tests with chimpanzees, orangutans, and toddlers.

Herrman et al 2007.





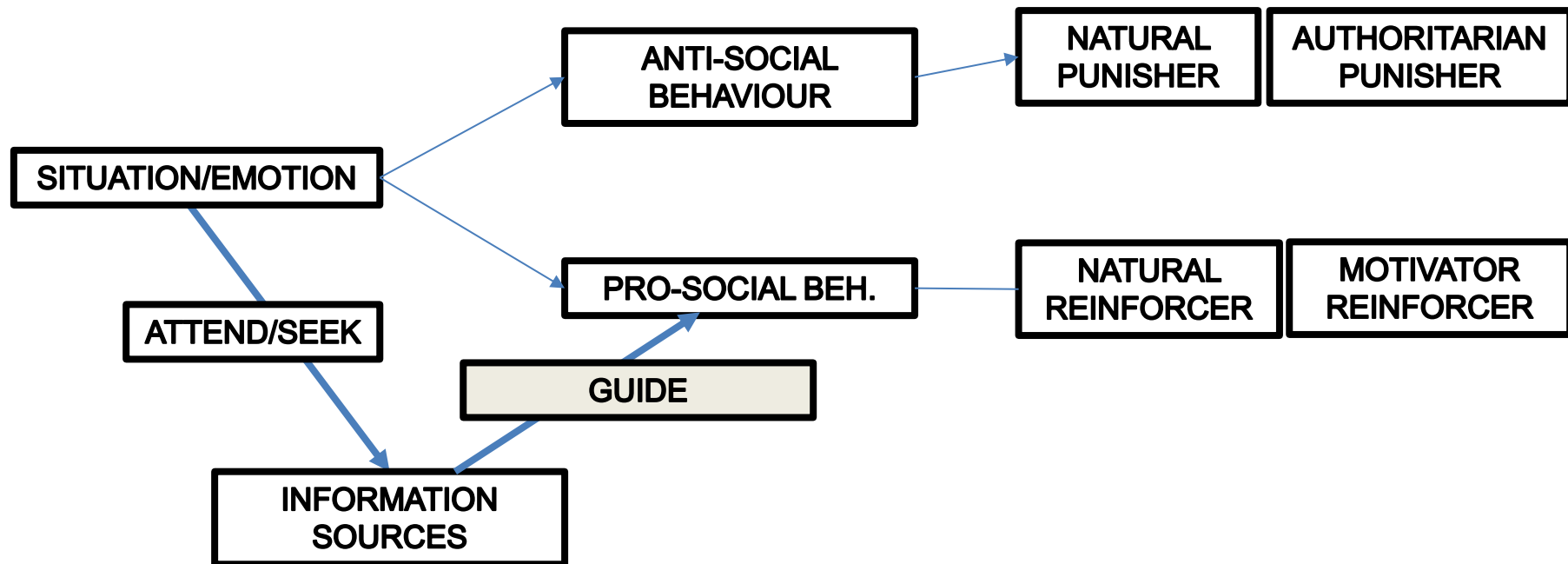
# Transmission Systems keep working



## A young girl with brown hair in pigtails, wearing a yellow shirt, is smiling and looking up at a woman. The woman, with dark hair and wearing a pink shirt, is smiling back at the girl. They are outdoors, with a blurred green background. In the top left corner, there is a small inset image showing a close-up of a person's feet.



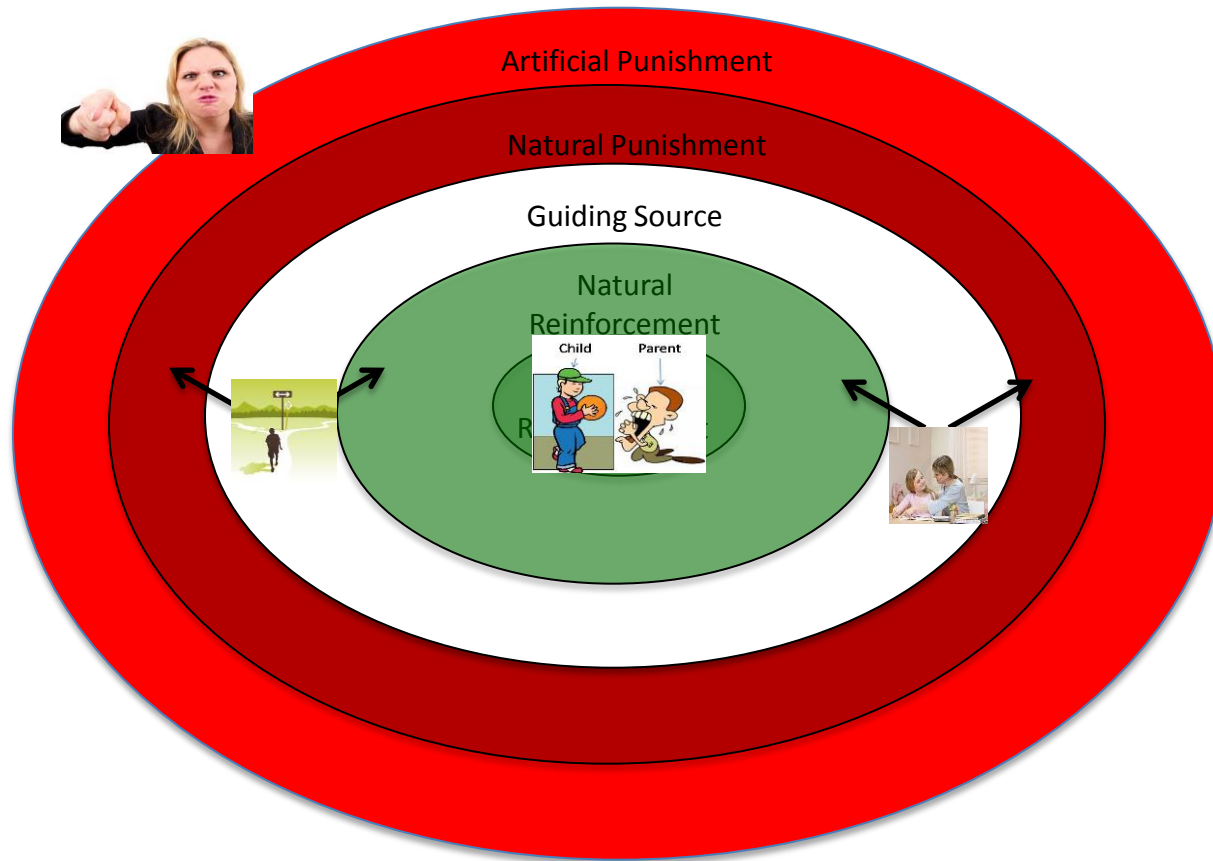
# How we 'transmit' as guides



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# WE ARE MEANT TO BE INFORMATION SOURCES NOT BEGGERS AND BOUNDARY KEEPERS



*BE A GUIDE*



# SOME KEY TIPS TO BEING A GUIDE

- Tone and Gesture;
  - Communication comes at many levels
    - Tone matters
    - Gestures matter
    - Your face and emotional expression matters
- You must model and show your advice works
  - Be consistent with information (do not contradict)
  - Make sure the advice you give can be seen to work (the child should see others learn also this way)
  - Make sure you model the principal in action
- Be a compassionate punisher and a natural reinforcer.
  - If you have
- REMEMBER KIDS WITH ASD CAN BE POOR AT EYE CONTACT – COMMUNICATE AT THE GESTURAL LEVEL THEY ARE INFORMED BY NOT AT THE LEVEL THEY FEEL THREATENED.
- LOOK FOR NATURAL INFORMATION SOURCES (not everything can or should be solved with a Social Story)
- 



# INTERVENING WITH LANGUAGE



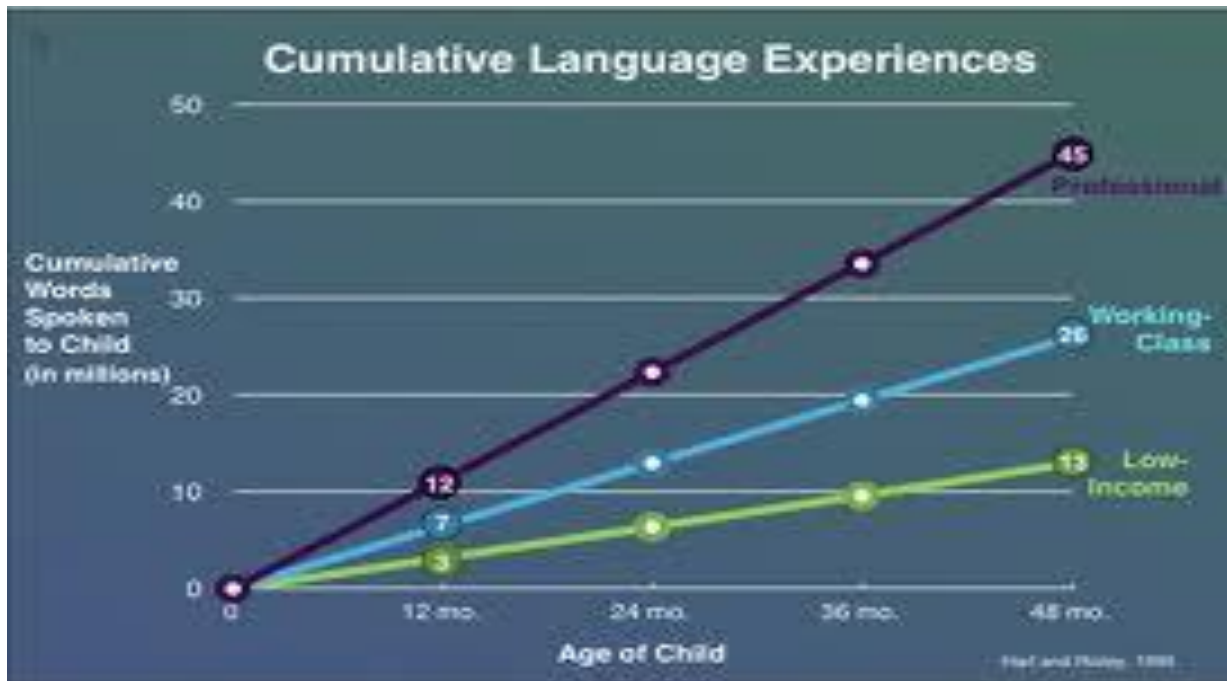


# MIRACLE OF LANGUAGE

- Many mammals can do most if not all of the non-verbals
- Only Humans can do language
- Language leads to reasoning and, most importantly, the ability to talk about events and actions that are not actually happening.
  - Can talk about the future
  - Can reflect on the past

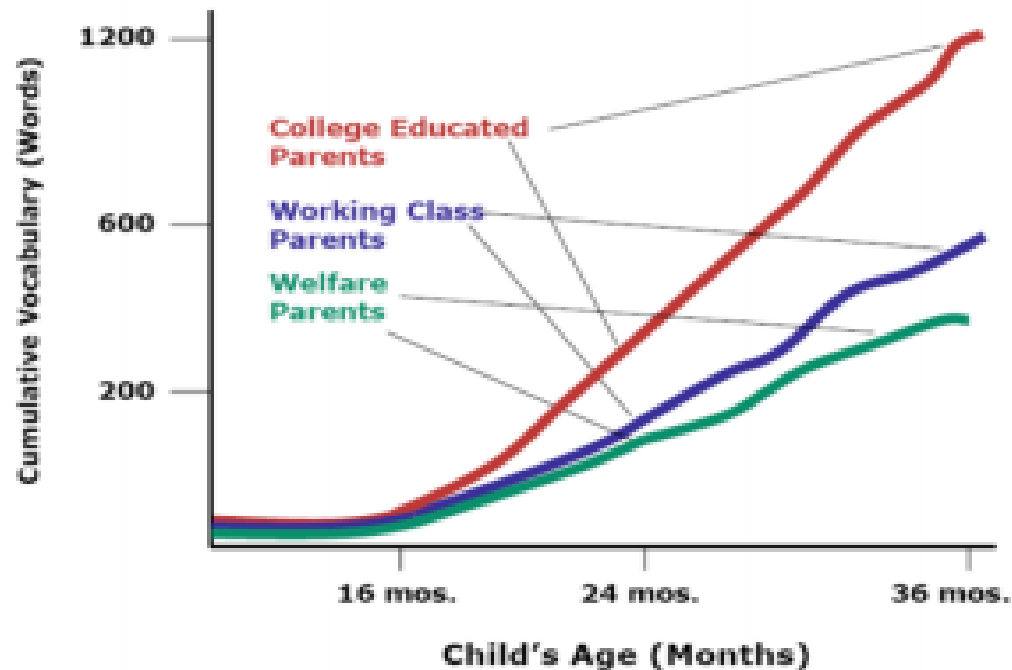


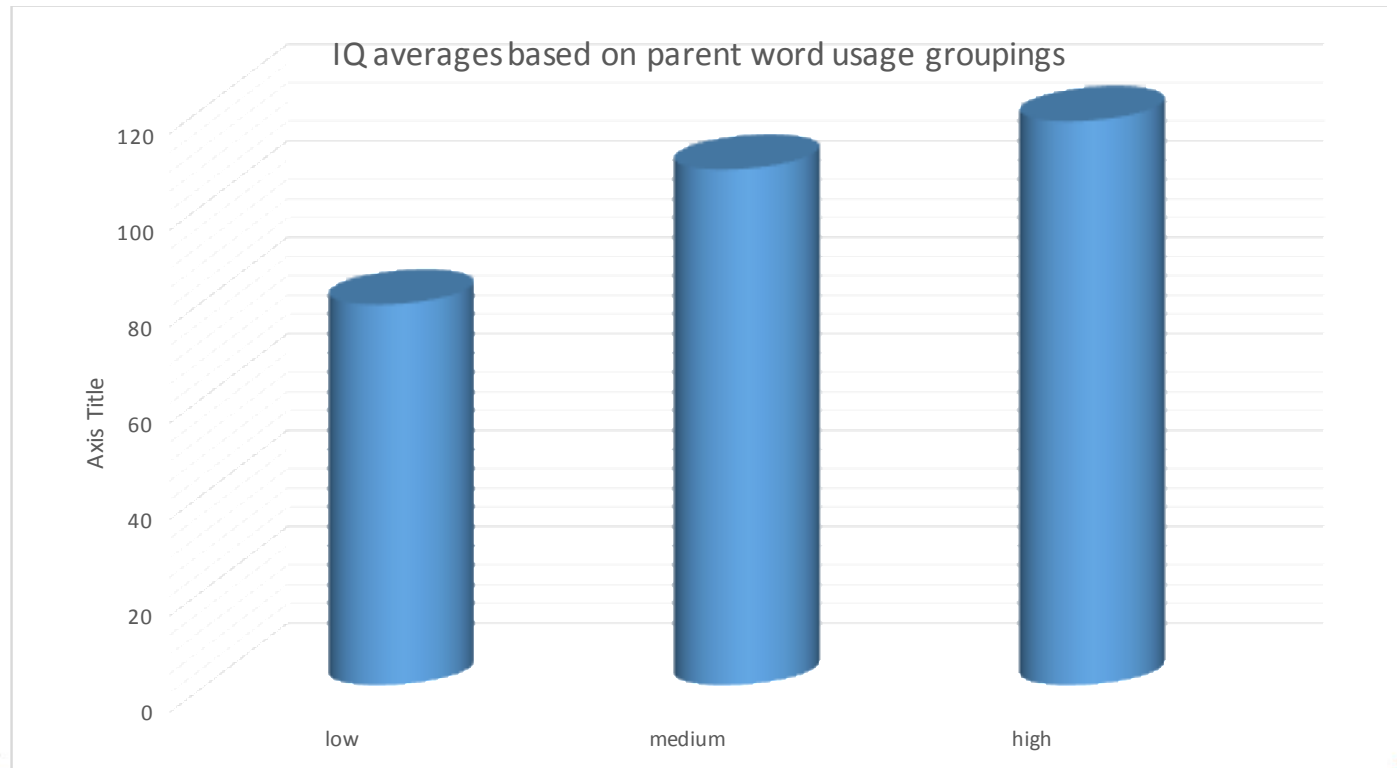
# Hart & Riseley (1995)





## Disparities in Early Vocabulary Growth





# WAYS WE CAN EXPLAIN\*

- Categorized by motivation (ie what part of the context the motivation and feedback comes from)

\* *Note this can be done verbally, in text or through pictures.*

## **TRACKING**

WHERE THE LANGUAGE SPECIFIES THE RELATIONSHIP BETWEEN THE CONTEXT, THE ACTION AND THE OUTCOME THAT ACTION SHOULD FUNCTION FOR.

## **PLIANCE**

WHERE THE LANGUAGE SPECIFIES ONLY THE ACTION AND THE FUNCTION IS TO PLEASE THE INSTRUCTOR OR FOLLOW A RULE BLINDLY.



# CONT'

## TRACKING

WHEN YOU KNOW THE ANSWER PUT YOUR HAND UP  
AND YOU WILL BE ASKED

IF YOU ARE FEELING ANGRY ABOUT SOMEONE  
PUSHING YOU, TELL A TEACHER AND SHE WILL TALK  
TO THE STUDENT WHO DID IT.

IF YOU PRACTICE ANOTHER EXAMPLE EVERY TIME  
YOU FAIL, YOU WILL START TO SEE GAINS

## PLIANCE

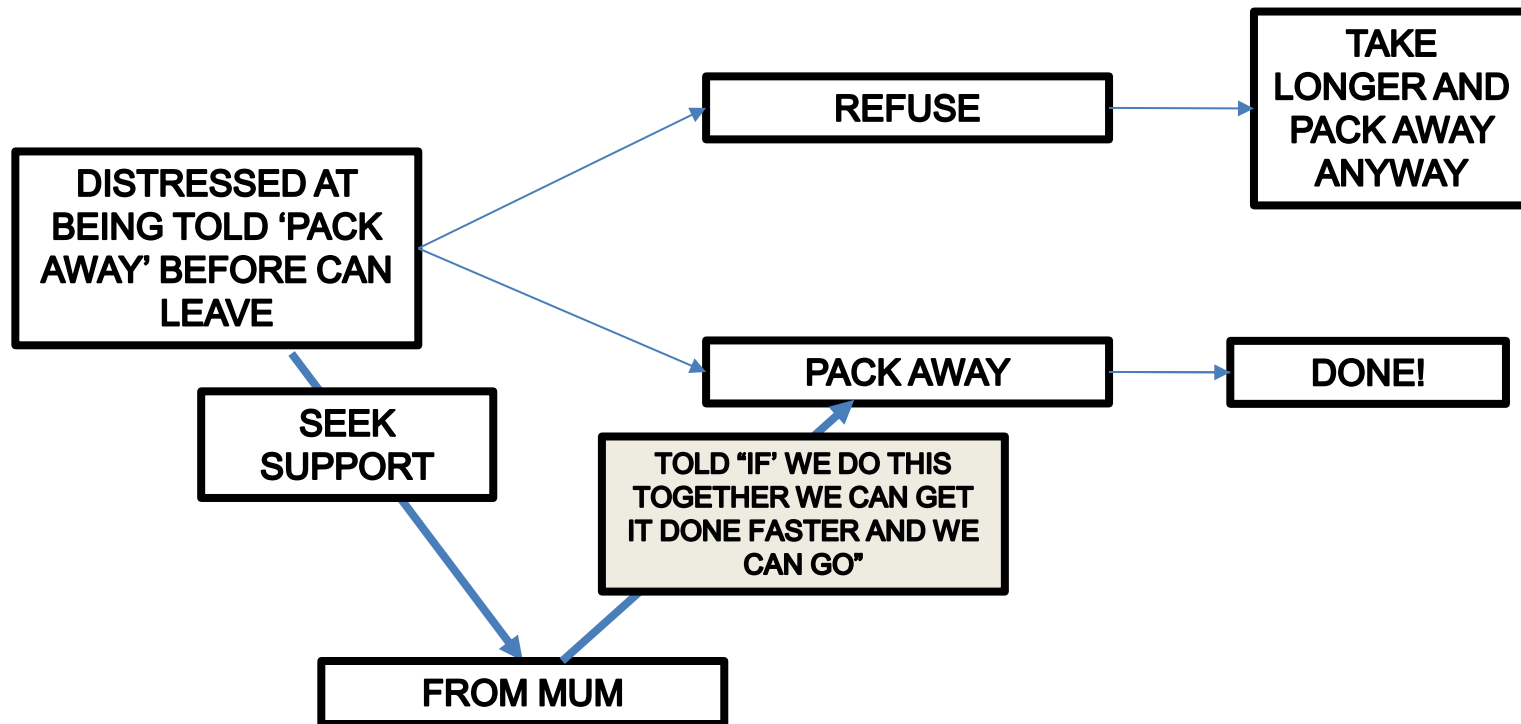
GOOD STUDENTS DON'T YELL OUT  
IT MAKES EVERYONE FRUSTRATED WHEN YOU YELL

DON'T GET ANGRY  
DON'T HIT  
IT MAKES ME ANGRY WHEN YOU DON'T LISTEN

IT MAKES ME HAPPY WHEN YOU TRY  
YOU LET YOURSELF AND ME DOWN WHEN YOU GIVE  
UP



# Example of Tracking



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# COMMON CHALLENGES IN SOCIAL TRANSMISSION



# INFORMATION SOURCE ERROR

- Development is like one long 'anxiety' program
- Anxiety is the body saying 'pay attention'
- It is not a 'bad' emotion
- It wants us to fight for valued directions and,
- Run when the value is not worth it.
- *All development is worth it.*
- So we need attachment and information sources to *guide* us through the anxiety as the experience is necessary for learning and growth.
- We must Trust the information sources to seek them out when our bodies are screaming to go into fight or flight.



# Opposition, 'Control' and Trust

- Many children with special needs (but also ADHD, ODD or anxiety and neglected kids) will not trust or always recognize you as an information source due to learning history.
- Special needs kids may miss cues for information developed within attachment.
- However there are many other reasons;
  - Parents/teachers who are disorganised can't predict well
  - Poor guide (ie gives bad advice)
  - Bad use of language (lots of pliance instructions)
  - Child has always bullied or begged their parent to get the track they want.





# Earning Credibility

1. Use Language They Understand
2. Use Good communication principals.
  - Watch your gesture and tone
  - Communicate at the child's level of understanding
3. Make sure you know what they find meaningful in the terrain (the context).
4. Predict only what you can predict (make sure tracks and terrain match).
5. Collaborate on outcome – try to show you are seeking to help (even if that means you may punish)
6. Build history of being worth listening to by doing lots of.
  - **High Probability Instructing**
  - **Choice Making in low demand/low risk contexts**
  - **Set up COLLABORATIVE contexts that still have boundaries**
7. If you have to Punish – do so compassionately and try to do reflection.



# PUTTING EMOTION INT CONTEXT

How we teach Adaptive Coping skills



# Poor Emotional Relationship and Understanding

- Feelings are part of the situation we respond to.
  - They are not the goal of actions nor are they to be controlled.
- Feelings are our innate 'animal' response systems whereas cognition is our socialized advanced response.
- Coping is the ability to determine how to have a feeling and make a prosocial choice.
- We are taught ways to do this through transmission processes.



# How Transmit Coping Skills: What to Teach

The goal of coping is

1. Not to fear emotions
  - There are no 'bad' emotions.
  - Have healthy relationships with all of them.
2. Focus on the needs of the situation not just the feeling being had.
  - What is the goal?
  - What will different behaviours do?
3. Do not be scared to explore and be curious.
  - It is better to try an idea out and explore than simply to react to what feels good/ better.
4. Do not be scared to let learning processes work.
  - Allow experience to teach



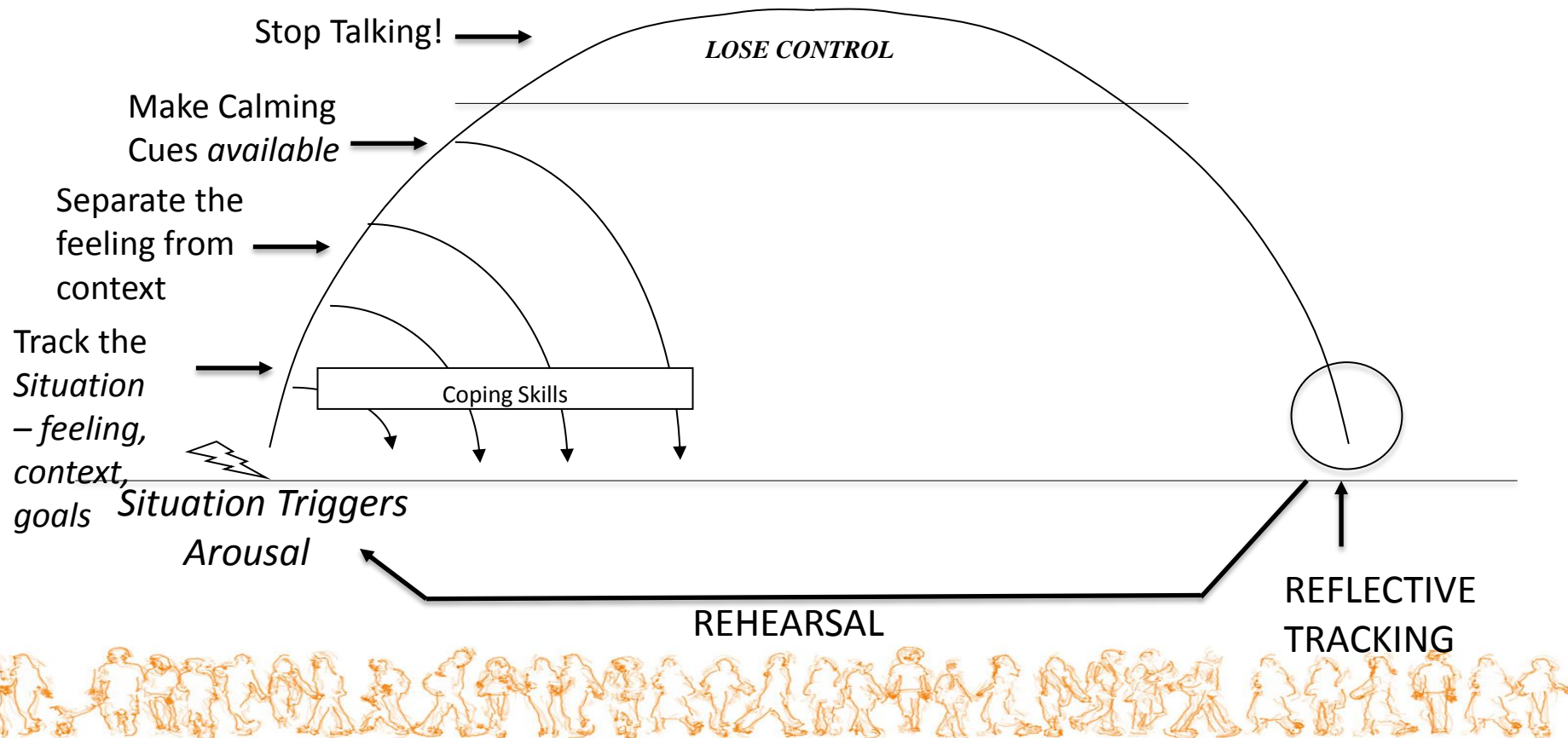
# How Transmit Coping Skills: How To Teach

The goal of coping is

1. Do not fear emotions
  - Stay calm and curious in your expression.
  - Acknowledge the feeling without concern.
2. Focus on the needs of the situation not just the feeling being had.
  - Acknowledge the feeling with distance (ie “you are feeling angry” not “you are angry” or “don’t be angry”)
  - Describe the context and collaborate to identify the goal.
    - “Ok we both can see the work, it gives you feeling of anger, what is your goal?”
3. Separate Behaviour and Feelings
  - “ok its fine to be angry”, “feel as angry as you like”, “what would you like to **do** though?”
4. Do not be scared to explore and be curious.
  - “Lets look at our options”.
  - “If you do X then Y would happen, if you do P then Q will happen”
5. Do not be scared to let learning processes work.
  - Once the child chooses allow him *experience* your tracks.



# When & How To Intervene: Arousal Curve and Information Sources



Reasoning (especially social comes from this)

The way we  
talk to our  
children  
becomes their  
inner voice.

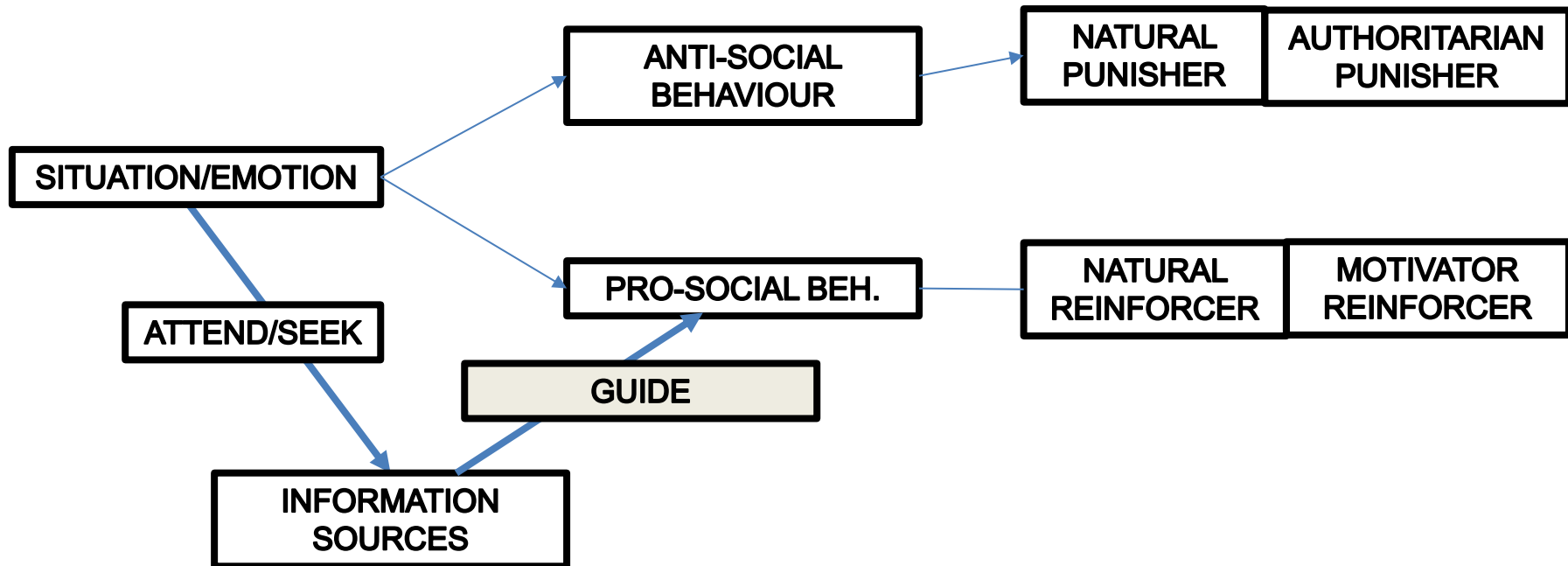
PEGGY O'MARA

[www.TheSilverPen.com](http://www.TheSilverPen.com)





# Lack of Motivation: Building Reinforcers

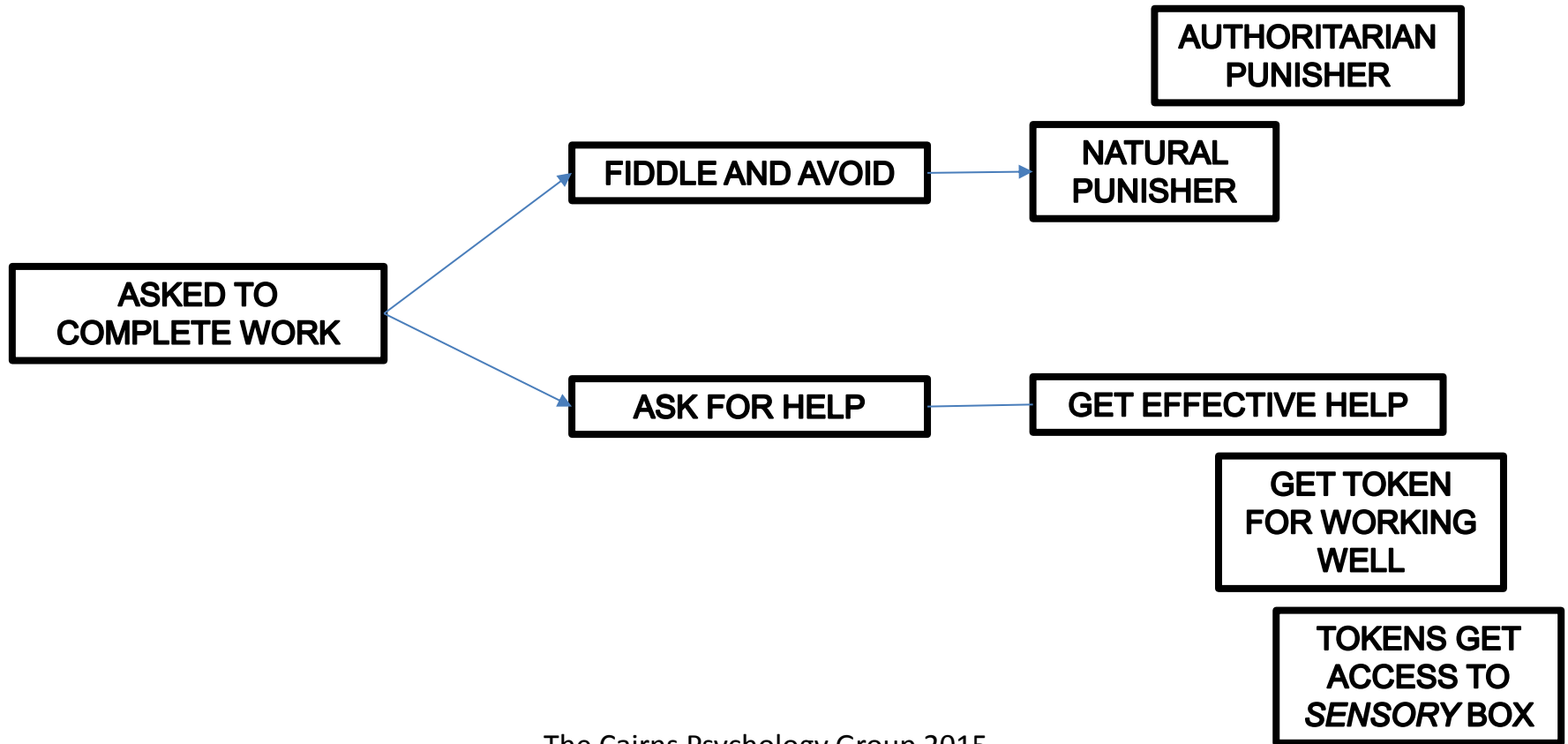


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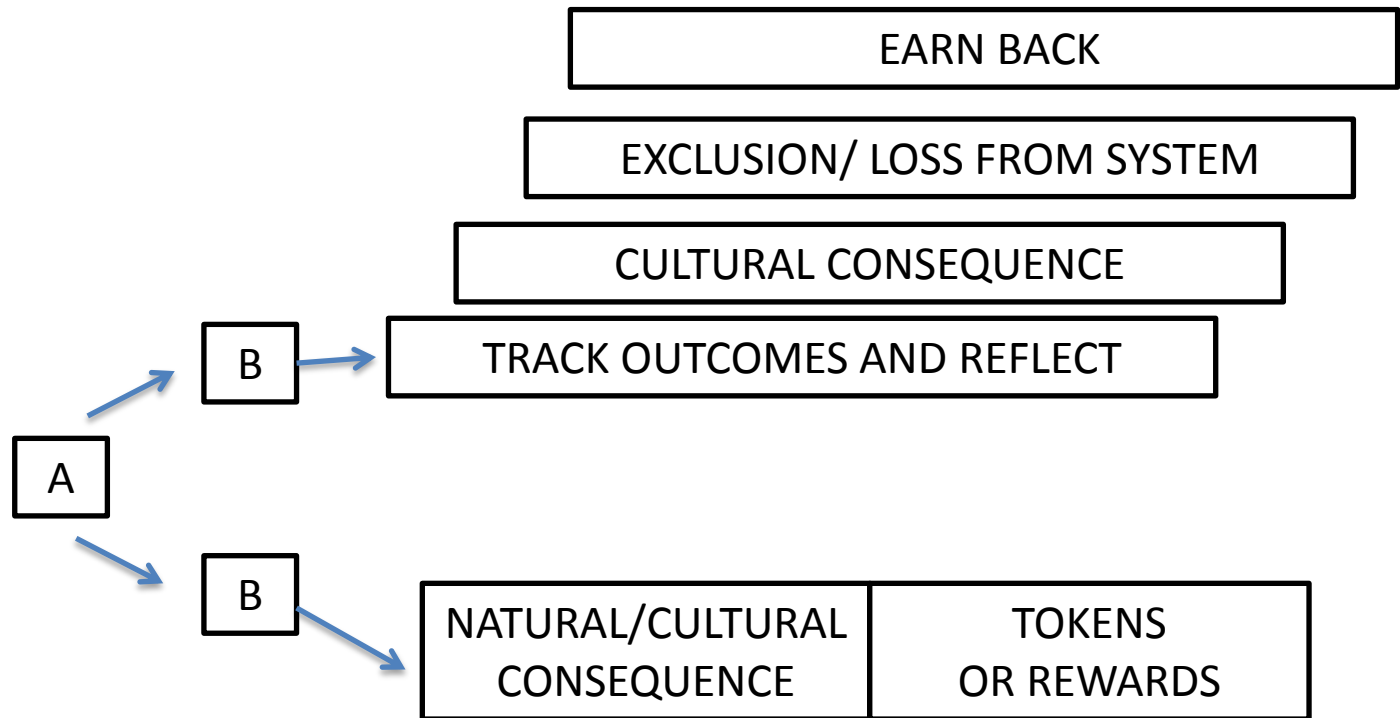
# Lack of Motivation: Building Reinforcers



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# Functional-Educational Boundaries (ie natural puniushers)



# Cultural Barriers to Success

- We often transmit badly.
  - We think about what we want to stop and forget about what we want to teach (ie start).
  - We focus on feelings and forget function and learning.
  - We bring our own 'baggage' into the interaction so do not consider the learners perspective.
  - We view things in terms of 'good and bad' and 'right and wrong'.
  - We take the interaction *personally* and get lost in our feelings.
  - We rely an authority and forget we earn credibility.
  - We panic about errors and model fear of learning and experience.
  - We get caught in concepts of 'justice' and 'fairness' we hold grudges.
  - ***We let coercive dynamics develop and are fooled by our short term minds into thinking they actually work..***



# Contextual Barriers

- Challenges in setting up needed learning contexts are particularly hard for advanced social skills where social dynamics must be used and thought through.
- Social Systems (eg peers) are not consciously teaching *nor are they meant to*;
  - They can give up on socially maladapted peers
  - Fail to keep trying
  - Not know how to help
  - Struggle to stay patient.



# Contextual Barriers'

- Creating Customised natural dynamics
  - Group work
  - Peer Tutoring
  - Roles that allow practice (eg teacher helper, leader roles)
  - Targeted groups that can be customised
    - Sport good for cooperation and roles
    - Team work good for roles and some cooperation
    - Drama excellent for advanced social reasoning and communication (plus can get cooperation and roles)

